Technology Development & Deployment Program

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Current Deployment Activities

In support of the Subsurface Contaminant Focus Area and BNL site needs pertaining to the Chemical Holes, BNL has initiated the deployment of the following four technologies as part of the Accelerated Site Technology Deployment:

1. Vibratory Segregation Technique by Duratek
2. X-ray Fluorescence Detection Instrumentation
3. PDV 5000 Anodic Stripping Voltameter
4. DMA 80 Direct Mercury Analyzer.

Remaining Technology Needs "Big Hitters" and Essential

- **BNL and ANL's Long Term Monitoring of Groundwater**
  1. The baseline costs for the long-term monitoring are estimated to be $48.3M (9/30/01 baseline) for the period from FY06 through FY32 (or $1.86M/year), which includes, monitoring, data mgmt, reporting, QA/QC, and well abandonment;
  2. Systems for reliable and quick measurements of these chemicals and radionuclides along with methods for accurate data integration and interpolation;
  3. Enhanced data management and integration and interpretation with fate-and-transport models can improve the ability to monitor plume movement;
  4. System which could help in making the large volume of historic information (almost all of which exists only in paper form) readily available to current users.

Remaining Technology Needs "Big Hitters" and Essential

- **Characterization of Reactor - Type Facilities at Brookhaven National Laboratory**
  1. Experience in D&D characterization of a reactor is limited. Baseline technologies have not been assessed.
  2. Characterization methods must be effective in identifying the quantity and location of radioactive contamination. At the same time, the methods should be such that, during their application, exposure of workers to radiation should be kept as low as is reasonably achievable (ALARA) and within occupational limits.

Remaining Technology Needs "Small" Things That Matter

1. Methods to Remotely Separate and Dispose of Potentially Activated Lead Shielding and Concrete Anchors from CP-5 Reactor Facility at ANL-E
2. Treatment of UF6 in Gas Cylinder
3. Treatment of TRU Organic Liquid
4. Treatment of Reactive Metals Contaminated with TRU

Current Role of TPOs

- Identification Of Technology Needs *
- Coordination of Technology Development, Demonstrations, and Deployments At The Site*
- Preparation for Business Management Reviews*
- Coordination Of Proposals*
- Collection and Review of Deployment Documentation (Deployment Fact Sheets)
- Identification of potential Safety Issues
- IPABS-IS Reporting
- Support for EM-50's Communication Efforts

* Continuing Role of TPO in FY03

How is the Funding for TPO/STCG Used? ($300K)

- The TPO/STCG funding is divided proportionately among the site representatives at the labs. They
  - serve as “champions” in promoting the use of innovative technologies;
  - provide all the documentation pertaining to deployment activities (Deployment Fact Sheets) and Life Cycle Planning Data
  - gather information regarding technology development
  - basically support the TPO in the coordination and management of ALL technology Development activities at the site

Future Role of TPOs as of FY03

- **Continued Management and Coordination of TD activities at the site(s):**
  1. Deployments
  2. Technology Development and Demonstrations
  3. Identification of technology needs to accelerate schedule of completion
- **Financial and Contractual** – with no clear definition as to what this role from EM-50 would cover

Issues Identified

1. EM-50's decision to eliminate the "Waste Elimination Team" which will significantly increase DOE-CH cost of disposal of these "special" waste types

2. Funding for the TPO/STCG activities will be zeroed out in FY2003
   - Pending decision to abolish the Site Technology Coordination Group
   - Technical Program Officer Role will be abolished

3. Without the site representatives, the responsibility falls to the federal employee in charge of EM-50 at their site. Not much of a big issue at ANL, but at BNL, this would be a significant increase in responsibility.

Recommendations: DOE-CH Needs EM-34's Endorsement

CH will prepare Issue Paper to EM-50 to reconsider continuing the funding for the following Groups in FY2003 and beyond in order to support the accelerated closure plan for ANL-E and BNL.*

1. Waste Elimination Team under the MWFA. Ten sites recommended unanimously that the WET efforts be continued and in some cases expanded in its role.
2. Site Technology Coordination Group. This site resources provide the management, oversight and review of the field site functions in support of EM science and technology (S&T) initiatives.
3. Full/Part Time Equivalent. The EM-50 Representative at BAO will need federal assistance and support in order to carry out the technology development, demonstration and deployment activities at BNL.

**This Issue Paper is scheduled for submission to EM-50 on June 14, 2002, and will delineate DOE-CH accelerated plan, the specific TD needs at our sites, and the technology development/demonstration projects we need to continue.*